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ABSTRACT

During 1967-1970, 9 faculty members from each of 2 developing institutions (Freed-Hardeman College and Lane College) engaged in a research development program that sought to train 1 person in research methodology and to offer concurrently an in-service training program to the other 8. Each group met every 2 weeks each academic year for a 2-hour seminar. Several teaching techniques were studied, 1 by each group each semester. The participants were evaluated by students through the Purdue Rating Scale for Instruction and the Stanford Teacher Competence Appraisal Guide. Two analyses were made on the data: (1) a t-test over items and participants, and (2) a difference score matrix for each faculty group on each scale for each treatment. Results revealed only a few items of significance on t-tests and differential effects on matrices. Criterion tests over 2 treatments revealed cognitive changes. Nonintellective effects were evidenced in administrative personnel, teachers, and students. In 1971, faculty members from Memphis State University joined the group in studying proposal writing where the participants submitted proposals to funding agencies. (Author/HS)

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WEST TENNESSEE RESEARCH DEVELOPMENT CONSORTIUM

March, 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education
National Center for Educational Research and Development
(Regional Research Program)

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ABSTRACT

During 1967-1970, nine faculty members from each of two developing institutions--Freed-Hardeman College and Lane College--engaged in a research development program that sought to train one person in research methodology and to offer concurrently an in-service training program to the other eight. Each group met every two weeks during each academic year for a two-hour seminar. Several treatments were studied, one by each group each semester: the lecture and discussion methods of teaching techniques. The participants were evaluated by students through two rating instruments: the Purdue Rating Scale for Instruction and the Stanford Teacher Competence Appraisal Guide. Two analyses were made on the data: (1) a t-test over items and participants, (2) a difference score matrix for each faculty group on each scale for each treatment. Results revealed only few items of significance on t-tests and differential effects on matrices. Criterion tests over two treatments revealed cognitive changes. Non-intellective effects were evidenced in administrative personnel, teachers, and students. In 1971, faculty members from Memphis State University joined the group in studying proposal writing. Then the participants wrote proposals and sent them to funding agencies.

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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Introduction

The West Tennessee Research Development Consortium was formed to increase the potentiality of research in two developing institutions of higher learning, Freed-Hardeman College and Lane College, and to involve Memphis State University personnel of the Bureau of Educational Research and Services in contributing research capabilities to the formulation of curriculum packets and proposals. The Consortium was designed to train one research person at the two college campuses in research methodology and to offer concurrently an in-service training program to eight faculty members from each of the two colleges.

The two developing colleges joined the Consortium because they have been trying to meet the crucial educational needs of the Mid-South by expanding programs of benefit to their constituents and publics. Their plans included an expansion in research capabilities either through the acquisition of new personnel or through the teaching of new skills to faculty members within the institutions. The latter path was chosen because of the limited funds available for increasing personnel; a choice was made to develop research competencies in their present faculty members. The in-service aspect of this project was needed to aid faculty members in developing not only their potential as research personnel, but also their ability in instructional processes and skills. Because extending released time to the participants to attend in-service meetings could not be afforded by the institutions, support was sought from outside sources through a Consortium arrangement.

The research development program sought to achieve the following objectives: (1) to develop or advance the research competencies of selected personnel on the campuses of the two cooperating colleges through conducting a cooperative research venture and through research training; (2) to expose the staffs of each of these colleges to the opportunity to observe and participate in an on-going research project while gaining the benefits of an in-service training experience; (3) to demonstrate the importance of research as a discipline, or an instructional method, or as a decision-making instrument, to the two developing institutions; (4) to develop curriculum materials that will aid in the maintenance quality of isntruction in developing institutions through in-service programs; (5) to study the treatment effects of curriculum packages designed to upgrade the instructional processes in higher education; (6) to offer laboratory experiences for undergraduate research training students of Memphis State University; and (7) to develop proposals for submission to funding agencies.

This report covers the research activities of the Consortium during the four years of its existence. The content is of a general nature, including the procedures used in conducting the program, results of the data analysis, conclusions, and recommendations. The report will not contain data gathered during the administration of treatments about the effectiveness of the treatments, nor will it contain tables created from

the data (these are available in the three annual reports forwarded to the funding agency at the conclusion of each previous year in which the Consortium was funded; that is, in 1968, 1969, 1970). It will not contain the treatments, or curriculum packets, and the criterion tests associated with two of the treatments, all of which also have been included in either the annual reports or progress reports of the Consortium. Neither will it contain facsimiles of rating instruments used in gathering data, nor will it contain proposals written in 1971 by Consortium participants, some of which have been included in the progress reports submitted in 1971.

Procedures

Included in the following material are the description of the population, a statement about the treatments, a presentation of the statistical design, a depiction of a time schedule, and an explanation of the analysis of the data.

Population

The participants in the Consortium during the first three years were nine faculty members from each of the developing colleges, Freed-Hardeman and Lane. Eight were designated as Faculty Curriculum Assistants; the other was called the Faculty Researcher. They were selected by the administrative officials of their respective institutions because of their potential as contributors to the development of research capabilities in their institutions and because they represented a variety of academic disciplines. When vacancies occurred, other faculty members filled them.

During the fourth year of the Consortium, the number of participants was reduced to three Faculty Curriculum Assistants and one Faculty Researcher at Freed-Hardeman College and to four Faculty Curriculum Assistants and one Faculty Researcher at Lane College. Also, six members of the faculty of the College of Education of Memphis State University, each from a different department, were named to be participants. They were recommended to the Consortium by the chairmen of their departments.

Treatments

During the first three years of the Consortium (1967-1969), the Faculty Curriculum Assistants and the Faculty Researcher of each institution met for two hours every two weeks during the academic year with the Instructional Processes Instructor from Memphis State University to study curriculum packets prepared by consultants. The packets centered on the lecture method of teaching (T1), the discussion method of teaching (T2), educational media (T3), and test construction (T4).

T1 The lecture treatment included discussion about an instructional system's framework, video taping, the lecture in overall instructional strategy, planning the lecture, and delivery elements.

T2 The discussion treatment concentrated upon studying and utilizing five major modes of discussion: (1) recitation, (2) induction or using leading questions, (3) reflective or inquiry, (4) speculative, and (5) exploratory.

T3 The educational media treatment was directed toward the improvement of teaching through an understanding of the

operation of audio-visual equipment and the utilization of it in actual classroom situations, the preparation of a variety of materials, and the discussion about newly-developing media concepts and related instructional devices. During the seminars, the following topics were discussed: the overhead projector and transparencies, the bulletin board, preparing 2" x 2" slides, the filmstrip and slide projector, the tape recorder, and the 16 mm movie projector.

T4 The test construction treatment dealt with testing and evaluating as part of the learning process, behavioral objectives, validity and reliability, types of testing, and objective testing. Four major objectives underlay the unit: improvement in test design, item selection, unit design, and differentiated testing. The treatment also included a criterion test.

During the third academic year (1969-70), the packet centering on instructional objectives (T5) was presented to both groups simultaneously during the fall semester; the spring semester was devoted to three group meetings, one at each institution, during which the packet discussed was a research review (T6).

T5 The instructional objectives treatment was directed toward the improvement of teaching through an understanding of the derivation, characteristics, and evaluation of objectives. During the seminars, the following topics were discussed: specifying instructional systems, derivation of terminal objectives, specifying instructional objectives, classification schemes, relationships among objectives, control and procedures in instruction, and evaluation and instructional systems. The treatment also included a criterion test.

T6 The research review treatment dealt with a review of instructional processes studied during the course of the Consortium, research methods employed during the same period of time, and implications of the research program for developing institutions. In addition, video taping was continued as a vehicle for improving classroom performance through technique analysis. Lastly, the materials that the Teaching Research Division of the Oregon State System of Higher Education at Monmouth created for CORD projects were studied. The forty-two packets were divided into nine parts: individually prescribed instruction, ERIC, experimental design, sampling techniques and survey research, proposal writing, the logic of statistics, measurement, evaluation, and testing.

The emphasis in the fourth year (1971) was on proposal writing. Meetings were held at each of the three institutions to inform participants about funding agencies and to share proposal ideas so that improvements could be made in them.

Each semester during the Consortium, the video tape recorder was used by faculty participants in either classes or in private sessions to record the use of portions of the treatments or the practice of them. All faculty members were taped either giving a lecture or leading a discussion, in each instance emphasizing some technique related to a teaching method that was emphasized in a seminar. After taping sessions were over, time was given both in class or in private to analyze the content of the tapes. The video tape recorders were left at the institutions for use by participants during the semesters that the contents of the seminars did not lend themselves to a close relationship to the video taping experience; in these instances, participants continued to be taped utilizing previously used methods.

Each treatment was developed by only one author except for the educational media treatment. The treatments were formulated specifically for the participants. Each writer had an orientation about the purposes of the Consortium, and some met with the Instructional Processes Instructor and the Faculty Researchers of each college before the treatments began. In one instance, the consultant's treatment evolved into a larger work, which has been published by the Bureau of Educational Research and Services, Memphis State University.[1] Another treatment will be presented in a chapter in a book about the discussion method of teaching.

Design

Each semester that a treatment was given, faculty members were asked to implement the treatment in their classrooms. Students were given the opportunity to rate the professors on a pre- and post-test basis to enable the researchers to discover if the treatment was producing any significant differences in the teachers' behavior in the classroom. Students rated the teachers on two instruments: the Purdue Rating Scale for Instruction and the Stanford Teacher Competency Appraisal Guide. Faculty members were made aware that (1) there were no local norms on these instruments; (2) there was no attempt to compare faculty abilities; (3) ratings of instructional approaches by individual faculty personnel in each group were to be held confidential and returned to each faculty participant upon his request, otherwise, individual ratings were made unidentifiable in the calculation of group means; (4) students in the classes of each faculty member provided the ratings on instructional procedures anonymously; and (5) ratings were to be used only to ascertain the effectiveness of the treatments.

The basic design for the first two years of the program was AB-BA, where O = measurement and T = treatment.

First Year	Fall Semester	Spring Semester
College A	$O_1 O_2$ T_1 $O_1 O_2$	$O_1 O_2$ T_2 $O_1 O_2$
College B	$O_1 O_2$ T_2 $O_1 O_2$	$O_1 O_2$ T_1 $O_1 O_2$

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[1]Naim A. Sefein, Meaningful Instructional Objectives: Their Derivation, Characteristics, and Evaluation (Memphis: Bureau of Educational Research and Services, Memphis State University, 1972.)

Second Year	Fall Semester	Spring Semester
College A	$O_1O_2O_3$ T_3 $O_1O_2O_3$	O_1O_2 T_4 O_1O_2
College B	O_1O_2 T_4 O_1O_2	$O_1O_2O_3$ T_3 $O_1O_2O_3$

The design used the third year was AA-BB, where O = measurement and T = treatment.

Third Year	Fall Semester	Spring Semester
College A	$O_1O_2O_3$ T_5 $O_1O_2O_3$	O_1O_2 T_6 O_1O_2
College B	$O_1O_2O_3$ T_5 $O_1O_2O_3$	O_1O_2 T_6 O_1O_2

Because tasks were different the fourth year, no design was necessary.

Treatments were alternated between the colleges; that is, during the fall semester, 1967-68, Lane College faculty studied Treatment 1 while Freed-Hardeman College faculty studied Treatment 2. During the spring semester, the packets were exchanged. Treatments 3 and 4 were studied during the second year, 1968-69, in the same manner. During the third year, 1969-70, Treatment 5 was studied by both groups during the fall semester; Treatment 6, by both groups in the spring semester.

Time Schedule

The time schedule followed during the first three years (1967-70) was:

Time	Activity
1st Week	Orientation
3rd Week	Baseline Data Established Treatment Begun
15th Week	Last Criteria Measurement

The analysis, interpretation, and discussion of the results of the ratings in the fall semester were made during the meetings in the spring semester; the spring semester results, during the summer, mostly on an individual basis because meetings were not held during the summer school sessions (most of the faculties of the two developing institutions did not have summer school assignments).

After the six members of the faculty of the College of Education of Memphis State University joined the Consortium in 1971, three meetings of all participants were held, one at each institution. The treatments and ratings by students were discontinued because the objective of the last

year became the task of writing a proposal directed toward a funding agency. The group met to discuss what sources were available for funding and to present the proposals for critical review.

Data analysis

Two basic types of analyses were made on the data each semester. The first was an item analysis using difference scores calculated from pre-test and post-test ratings of teachers on individual items on the instruments administered. This analysis was used to compare treatment groups to determine if items changed on the scales as a result of the treatments; i.e., to compare the effectiveness of treatment over groups. Significance was sought by comparing difference scores using a t-test on the items on both of the instruments.

In order to try to identify the weaknesses in the treatment which resulted in no significant differences, an analysis was made of difference scores to see how individual faculty members changed during the period and on what items. This second type of analysis was made through building a difference scores matrix for each faculty group on each scale for each treatment.

Students in the Undergraduate Research Training Program at Memphis State University were involved in hand-compiling data and in running t-tests during the first semester of the project, but this task was shifted to the Memphis State University Computer Center in order to obtain the results earlier and to guarantee greater efficiency in data tabulation. During the third year of the project, a graduate student, who had been a participant in the Undergraduate Research Training Program, was funded to oversee the computer programming for the Consortium data. Students were not involved in the administration of the instruments because of the difficulty in arranging their schedules to allow them to participate in this program activity.

Results

The narrative following describes the results obtained from the administration of the various treatments and the discussions about proposal writing.

The lecture method treatment, 1967-68

The lecture method treatment was discussed by faculty members of Freed-Hardeman College during the fall semester of 1967-68, by faculty members of Lane College during the spring semester. Only for the teachers at Freed-Hardeman College was there an item that showed significance; it was item 5, "the use of evaluation to improve teaching and learning," on the Stanford scale.

The difference scores matrix for the Freed-Hardeman faculty on the Stanford Guide showed mean increases on seven items, mean decreases on six items. Of the eight faculty members, four showed a mean increase over all items; four, a decrease over all items. The data accumulated by utilizing the Purdue Scale with the faculty provided contradictory information: all item means decreased, and all faculty means decreased.

For the Lane College faculty, the difference scores matrix on the Stanford Guide showed four item mean increases and nine item mean decreases. Faculty members showing a positive change totaled three over all items; those showing a negative change, five over all items. On the Purdue Scale, there were five item mean increases and five item mean decreases. Four of the eight faculty members registered a mean increase, and three registered a mean decrease.

The discussion method treatment, 1967-68

The discussion method treatment was studied by faculty members of Lane College in the fall semester of the 1967-68 academic year, by Freed-Hardeman College faculty members in the spring semester. Only one item on both instruments was found to be significant for one of the faculties, Lane College: "fairness in grading" on the Purdue Scale.

The difference scores matrix for the Lane College faculty showed that four item means increased and that nine item means decreased on the Stanford Guide; three faculty means increased, five decreased. On the Purdue Scale, two item means increased, eleven decreased; faculty means increasing totaled two, those decreasing totaled eight. For the Freed-Hardeman faculty, on the Stanford scale only one item mean increased, twelve decreased; faculty increases on the mean totaled two, decreases eight. On the Purdue Scale, three item means increased, seven decreased; one faculty mean increased, and the other seven faculty means decreased.

The educational media treatment, 1968-69

The educational media treatment was studied during the first semester, 1968-69, by teachers at Freed-Hardeman College; the second semester, by the faculty of Lane College. For the Lane College teachers, there were no significant differences between the pre- and post-test ratings except on two items of the Purdue Scale; both were negatively significant. In contrast, there was a negative significance on ten items on the Stanford Scale. For Freed-Hardeman teachers, there was one item with significant difference on the Purdue Scale; it was negatively significant. On the Stanford Scale, two items were significant, both positively.

Analyses made upon Lane College faculty on the two rating scales showed that there were six teachers who registered significant scores, three of which were of negative significance - one severely so - on the Purdue Scale. A record of t-value scores on the Stanford Guide revealed four negative t-values, two extremely so, of six significant scores. Analyses on Freed-Hardeman faculty on the two rating scales showed an equal distribution of the six significant t-values, three negative and three positive, on the Purdue Scale; on the Stanford Guide all t-values were significant, five being positive.

On the difference scores matrix for the Lane College faculty, there was one item mean increase, three teacher mean increases, five item mean decreases, and five teacher mean decreases on the Purdue Scale. The differential effect repeated on the Stanford Guide; there were three individuals whose means increased, five whose means decreased, but there was no item mean increase despite positive individual improvement.

On the same treatment involving Freed-Hardeman faculty, on the difference scores matrix on the Purdue Scale, three item means increased, three faculty means increased, seven item means decreased, and five faculty means decreased. On the Stanford Guide there were increases on all item means; five of the eight teachers sustained increases on individual means, three, decreases on means.

The test construction treatment, 1968-69

The test construction treatment was studied during the first semester by Freed-Hardeman College faculty members, during the second semester by teachers at Lane College. Additionally, a pre-test and post-test, designed by the consultant, was given each faculty member over the treatment.

For Freed-Hardeman College teachers on items on the rating scales, negative significance was found on the Purdue Scale on nine items, no significant difference on the remaining eleven. There were no significant differences on eight items on the Stanford Guide, negative significance on the remaining five. For Lane College faculty on items on the Purdue Scale, negative significance differences were found in five instances. There were no significant differences on items on the Stanford Guide.

For Freed-Hardeman College faculty, on the Purdue Scale, the t-values of all faculty members were of significance over the first ten items of the scale, all but one having been negative. On items 11-20, significance was discovered on the t-values of six of the eight teachers, four of these were negative. On the Stanford Guide, seven of eight faculty t-values were found to be significant, six of which were negative.

For Lane College faculty on the same scales, five teachers had t-values of significance over the first ten items of the Purdue Scale; four of these were negative scores, one extremely so. Over items 11-20 on the Purdue Scale, five faculty achieved t-values of significance, three of which were positive, one extremely so. On the Stanford Scale, six faculty t-values were of significance, four of which were positive.

The difference scores matrices for the Freed-Hardeman College on the Purdue Scale showed that the group means increased on only one item of the first ten and on four of the next ten, items dealing specifically with testing; all other items showed decreases. One faculty member had a mean increase on the two portions of the scale, while one other had an increase on the last ten items; all other faculty means showed decreases. The matrix of the Freed-Hardeman group for the Stanford Guide showed three item mean increases and two faculty mean increases; all other item means decreased (twelve), as did all other faculty means (six).

The matrix on the Purdue Scale for the Lane College faculty revealed that there were six item mean increases on items 11-20, that portion of the scale dealing with testing; all other item means decreased (fourteen). Three teachers had mean increases on the first portion of the scale, four on the second portion. Five faculty means decreased on the first portion of the scale, four of the second portion. The matrix for the Stanford Guide indicated improvement among seven individuals while one person showed a severely negative change.

A criterion test was given before and after the test construction treatment. At Freed-Hardeman College, participants scored an average of 11.0 points on the pre-test and 18.4 points on the post-test, an increase of 7.4 points per teacher. The eight members of the Lane College faculty scored an average of 10.4 points on the pre-test and 16.6 points on the post-test, an average increase of 6.2 points per teacher.

The instructional objectives treatment, 1969-70

The instructional objectives treatment was studied during the first semester by the faculty members at both colleges. Only one item of statistical significance between the faculties of the two colleges was found on the Purdue Scale; it was negative. There were two items of significance, both negative, on the Stanford Guide.

There was one member of the Freed-Hardeman faculty who registered a significant score--negative--on the Purdue Scale. Of the Lane College faculty, two teachers had significant t-values, both negative, on the Purdue Scale. On the Stanford Guide, two teachers had significant t-values, both negative.

The difference scores matrices revealed that, of the Freed-Hardeman College faculty on the Purdue Scale, there were four teacher mean increases, one item mean increase, three teacher mean decreases, and nine item mean decreases. For the Stanford Guide, the results showed six individual mean increases, four item mean increases, two faculty mean decreases, and nine item mean decreases. On neither instrument did the overall mean increase.

On the same treatment involving Lane College faculty on the Purdue Scale, there were eight faculty mean decreases, thirteen item mean decreases. On the Stanford Guide, two of the eight teachers sustained increases on individual means, four decreases. All item means decreased.

On the criterion test over the instructional objectives treatment, the Freed-Hardeman College faculty had a gain by five teachers, an average of 4.6 for the group. For Lane College faculty, six teachers had gains, and the group gained an average of 2.4 for each person. Freed-Hardeman College faculty scored an average of 26.5 on the pre-test, 31.1 on the post-test; Lane College faculty, an average of 20.1 and 22.5, respectively, on the same tests.

The research review treatment, 1969-70

Because only three faculty members from Freed-Hardeman College and none from Lane College had been in the Consortium for the full period, 1967-70, no comparisons were made between individual or group scores attained on the first administration of the scales in the fall of 1967 and those obtained in the last administration in the spring of 1970. Instead, comparisons were made on the data gained from two administrations of the scales conducted in the spring semester of 1970 before and after the treatment was studied.

When comparing the difference scores of the Lane College teachers during the second semester with those of the Freed-Hardeman College teachers during the same semester on the Purdue Scale and Stanford Guide, there were no items of significance on either scale. For the Freed-Hardeman College faculty on the two rating scales, one t-value was significant; it was on the Purdue Scale and it was negative. For the Lane College faculty on the Purdue Scale, one teacher had a t-value of significance; it was negative. On the Stanford Scale, one faculty t-value was of significance; it was negative.

The difference scores matrix for the Freed-Hardeman College group on the Purdue Scale revealed that three faculty members had a mean increase and four had a mean decrease. There was a mean decrease on all items.

On the matrix of the Freed-Hardeman group for the Stanford Guide, there was a scattering of increases among members of the group; i.e., one item mean increase and four faculty mean increases. Twelve item means decreased; four faculty means decreased.

For the Lane College faculty, the matrix on the Purdue Scale showed that there was one item mean increase; nine item means decreased. Three teachers had mean increases; five had decreases, of which two had negative gains on all items. The matrix for the Stanford Guide indicated improvement on means among five individuals while three people showed severely negative changes. All item means had decreases.

Proposal writing

No data was collected during the fourth year because no treatments were studied and no instruments were administered. The criterion for achieving the objective of the year's activities was the submission of a proposal by each participant. All participants of Freed-Hardeman College completed their proposals; all at Lane College, theirs; and five of six at Memphis State University. The proposals have been forwarded to funding agencies, including the National Science Foundation, the National Center for Research and Development (Regional Research Program, Targeted Communication), and the Bureau of Educational Professions Development (EPDA, Section E). One proposal sent to the NCERD Regional Research Program by a faculty member of Memphis State University has been funded.

Results that were not measurable but were evident were the major gains in both attitudes and skills made by the Faculty Researchers and the attitude gains toward research and participation in research projects by the faculties of both colleges. These changes will provide future benefits that are not currently observable. Gains have been made in increased faculty interest, communication, and knowledge of current developments in relation to the treatments studied.

The climate for change has been established in both institutions, which can be seen not only in the faculty participants, but also in the willingness and eagerness of the research personnel trained during the project, and in the cooperation of the administrators of the colleges in helping to establish an administrative pattern through which research has taken place.

Conclusions

Conclusions that are contained in the following material relate to the treatments and to the objectives of the project.

Inferences about treatments

Generally speaking, the lecture method treatment and the discussion method treatment, studied during 1967-68, did not produce a change on the part of faculty members at either institution that resulted in better classroom behavior. No significant changes were recorded over either of the two rating instruments even though trends toward improvement were shown on a rather inconsistent basis in individual items on the instruments. The lack of significance could have resulted from an inadequate treatment basis, familiarity of faculty members with the teaching-learning methods, or the gaining of sophistication in rating by the students.

The statistical data for the academic year 1968-69 revealed a differential effect on both rating instruments over both the educational media treatment and the test construction treatment. Though significant changes toward improvement were shown both on items and faculty members, more instances of significant negative changes were recorded, particularly on items. The differential effect could have been influenced by the relationship between the rating instruments and the treatment, the increased understanding of the instruments by the student raters, the confidence of the students in the anonymity of their rating, and the presence of new personnel in the faculty groups of the two colleges.

The statistical data for 1969-70 revealed little effect on both instruments over both the instructional objectives treatment and the research review treatment. Significant changes were shown on items when institutional groups were compared and on faculty members, all of them negative t-values. The lack of positive significance could be attributed to the lack of relationship between the rating instruments and the treatments, especially the research review unit; that is, the content of that unit could not be enacted in the classroom because it was not either a discipline or a method.

The difference scores of the criterion tests, which were given on a pre and post-test basis with the test construction treatment and the instructional objectives treatment, revealed that the treatment was effective in producing a change in the cognitive domain of the participants of each of the colleges, though this was not tested statistically.

Though there were no instruments administered to gather statistical data of the effect of the video taping sessions on each professor, or group of professors, there was a positive effect on the groups as a whole. Experiences were recounted about the effect of practicing micro-teaching techniques on subsequent classroom performance. Opportunity

was given some teachers to use teaching methods for the first time. Student appreciation was evident from comments made by them about professors using the methods discussed in the seminars and about taped classroom sessions.

The faculty members involved in the Consortium in 1971 evidenced their interest in the project by writing proposals addressed to various funding agencies.

Inferences about objectives

All of the objectives of the project were achieved in some measure. The first objective, to develop or advance the research competencies of selected personnel on the campuses of the two cooperating colleges through conducting a cooperative research venture and through research training, was accomplished by selecting a person on each of the cooperating campuses to serve as the institution's Faculty Researcher. Their duties consisted of aiding in the selection of participants, coordinating the activities of their campus groups, offering group counsel and aid for problems related to the Consortium, serving as a source of information concerning research, and cooperating with the other institutional representatives in planning the activities of the Consortium. They also increased their own research competencies by attending national, regional, and local meetings either related directly to the Consortium or to research related to their institutional situations. On occasion, they instructed their groups in the treatments being studied. During the last year, they were instrumental in giving substantial aid to the participants in identifying research problems and in proposal writing. Following his attendance at the Consortium, the Faculty Researcher at Freed-Hardeman College wrote a proposal that was funded by the Regional Research Program and either wrote completely or participated in the writing of proposals funded under EDPA, Section E; Title III; and Title IV.

The second objective, to expose the staffs of each of these colleges to the opportunity to observe and participate in an on-going research project while gaining the importance of research as a discipline or an instructional method, was fulfilled by selecting eight faculty members from each of the two campuses to become participating members of the seminar group. Replacements were secured each year when vacancies occurred. Generally, the group membership was broadly based, representing the various academic disciplines on the campuses. Each research group, for the most part, met by itself, but meetings of both groups were held once or twice each of the first two years. During the second semester of the third year, the groups met together for all of their seminars. In 1971, the two faculty groups were joined by a group of six members of the faculty of the College of Education at Memphis State University. The three meetings held that year were conducted jointly, one at each institution.

The third objective, to demonstrate the importance of research as a discipline or an instructional method, was accomplished mainly by the faculty members participating in the seminar and activities related to the Consortium and by learning about research methods and techniques, which, although not directly taught, were implied in discussion. When curriculum packets were used in the classrooms, it was evident that results of research were being employed. The practice of using the video tape equipment for classroom performance in improving instructional techniques evidenced the use of research results. The faculty groups were visible on the campuses, evidenced by the interest of non-participants in joining them. Opportunities were given to present the objectives, purposes, and activities of the Consortium to faculties of each of the schools. Each of the three persons who served as a Faculty Researcher was given a greater and more meaningful responsibility in his college because the administrative officers of the colleges recognized the value of his work in the research project to the broad goals and objectives of his institution.

The fourth objective, to develop curriculum materials which will aid in the maintenance quality of instruction in developing institutions through in-service programs, was reached by developing the curriculum packets used in the seminar. Consultants drew upon their experiences to write materials that would be able to be used during the allotted time by the participants. The packets covered the subject being discussed by adequately describing the content of each component, generally in seven lessons. They were most often presented in an outline form, and syntheses. Application of the contents of the curriculum packet was made in courses the professors were teaching. On occasion, faculty members sent their evaluations of the materials to the consultants. When equipment or special kinds of materials were necessary, they were included in the presentations. Two packets included criterion tests. Generally, the consultant attended the initial meeting of the seminar in order to present his material and the last in order to summarize the packet.

The fifth objective, to study the treatment effects of curriculum packets designed to upgrade the instructional processes in higher education, was accomplished through holding seminars every two weeks during the academic year during which time the participants discussed the treatment in a class in which students rated them on two instruments, the Purdue Rating Scale for Instruction and the Stanford Teacher Competence Appraisal Guide, on a pre- and post-test basis to ascertain whether the treatment produced significant changes in teacher behavior. Analyses of the data were made using a t-test and a difference scores matrix over each treatment. Two treatments were preceded and followed by criterion tests.

The sixth objective, to offer laboratory experience for undergraduate research training students of Memphis State University, was achieved through involving the students in tabulating data gathered on the two rating instruments and in running statistical tests on the data. While involved in these activities, the group was enrolled in two research classes, one taught by the Research Director of the project. After the Undergraduate Research Training Program ended, one of the students was employed by the Consortium for one year to write data analysis programs for the computer analysis of data yielded by the rating instruments.

The seventh objective, to develop proposals for submission to funding agencies, was attained through all but one of the participants from the three schools finishing their proposals and submitting them to funding agencies.

Recommendations

The following recommendations relate to the findings and to the conclusions about the data:

(1) A program of this type should be continued on a cooperative basis involving the three institutions, and funds should be sought from the institutions to support activities agreed on by the group.

(2) In-service programs for training faculties in research about instructional processes should be continued in each institution.

(3) Policies and procedures should be established whereby individualized research in instructional processes can be maintained by faculty members in the cooperating institutions.

(4) The treatments studied should be more specific and their applications should be monitored more thoroughly.

(5) Treatments should center on skills in instruction not practiced most of the time in institutions of higher education.

(6) Criterion tests should precede and follow the studies of the treatments. Standardized tests given on a pre- and post-test basis should be selected on the basis of their abilities to measure the materials in the treatment packets.

(7) Faculty members should continue to be rated in their classrooms by students.